Fall Webworm

Wraps branches in silk in late summer

Name and Description—*Hyphantria cunea* (Drury) [Lepidoptera: Arctiidae]

Figure 1. Fall webworm adult. *Photo: Gerald J. Lenhard, Bugwood.org.*

Adult fall webworms are white with some orange markings on the body and legs. The wings often have some black spots and an expanse of about 1 1/4 inches (3.2 cm) (fig. 1). Eggs are light green or yellow, globular, and laid in flat masses consisting of several hundred eggs. Larvae are hairy with distinct, paired, dark spots on each segment of the back and are 1 1/4-1 1/2 inches (3.2-3.8 cm) long at maturity. Larval color is variable, with two races recognized (figs. 2-3). The black-headed, or northern race, has a black head with a pale yellowish or greenish body that has a dark stripe on the back and long white hairs rising from red or black tubercles (humps). Larvae of the red-headed, or southern race, are yellowish tan with red or orange-colored heads and brownish hair that arises from reddish brown tubercles. The distribution of fall webworm in North America is transcontinental, extending from southern Canada to northern Mexico.

Hosts—Over 100 hardwood tree species, including alder, ash, choke-cherry, cottonwood, elm, maple, various fruit trees, walnut, and willow

Life Cycle—Fall webworm generally has one generation per year in the Rocky Mountain Region. Adults appear from late June to early July, fly at night, and lay eggs on the underside of leaves. After hatching, the young larvae feed gregariously, at first on the epidermis but not the veins of both leaf surfaces, producing a skeletonized pattern. As the larvae grow, they begin to feed on entire leaves, spinning silk wherever they go. Eventually, they enshroud leaves and then whole branches in a loosely spun tent of silk, within which larval development and feeding occurs, so that leaf fragments, cast skins, and droppings become incorporated. The larvae, when disturbed, often twitch and wave their bodies synchronously in what is thought to be predator avoidance. Feeding continues until mid-September, when full-grown larvae wander from their host plant in search of protected pupation sites.

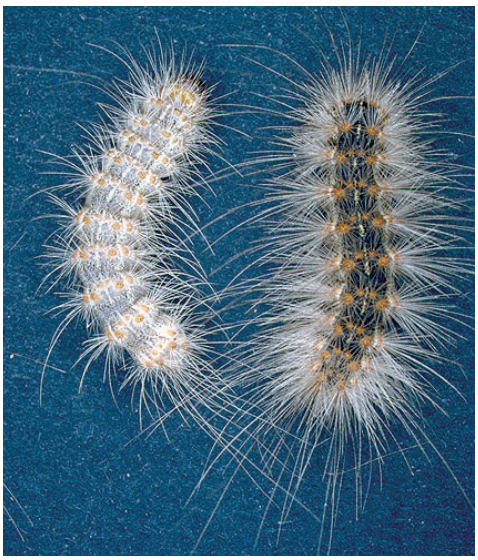

Figure 2. Two forms of the red-headed race of the fall webworm larva. *Photo: Lacy L. Hyche, Auburn University, Bugwood.org.*

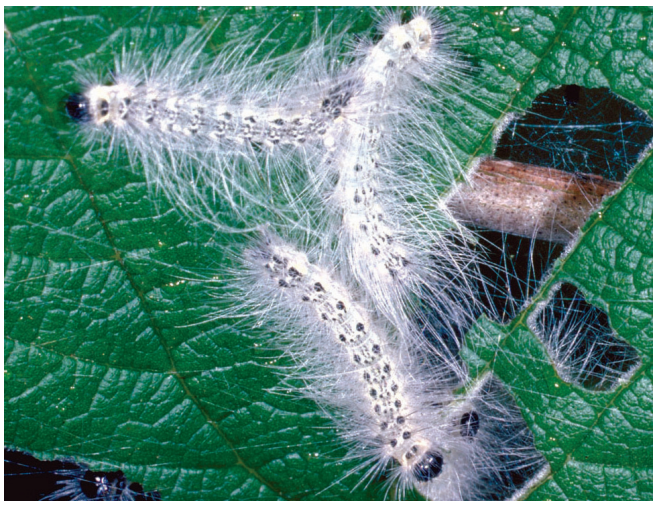

Figure 3. Examples of the black-headed race of fall webworm larvae. Note that both races can be present together and each is variable in coloration. *Photo: Lacy L. Hyche, Auburn University, Bugwood.org.*

The insect overwinters in the pupal stage within a light silken cocoon in the soil, leaf litter, on the sides of buildings, or on tree trunks.

Damage—This insect causes minor defoliation in most forested situations. Large infestations can envelop and defoliate entire trees, which seems a relatively frequent occurrence on narrowleaf cottonwood along streams in Colorado. Substantial defoliation may weaken tree defenses to other opportunistic agents. As the most common tent-making defoliator in much of North America, fall webworm can cause loss of visual quality in ornamental plantings due to the unsightly tents (figs. 4-5). Wandering hordes of hairy, full-grown fall webworm larvae can be a substantial, if brief, nuisance.

Figure 4. Silken tents that contain fall webworm colonies can envelop whole branches or entire trees. *Photo: Ronald F. Billings, Texas Forest Service, Bugwood.org.*

Management—Generally, population control need not be attempted, as biological impact from fall webworm defoliation is inconsequential. Deciduous tree species can recover from substantial defoliation, particularly if impacted late in the season when most growth has already occurred. Typically, impacts to plant health cannot be observed until defoliation involves more than 20% of the foliage. Fall webworm populations are usually not maintained at high levels for consecutive years, although local outbreaks can be relatively common.

Figure 5. Silken tents that contain fall webworm colonies on chokecherry. *Photo: Whitney Cranshaw, Colorado State University, Bugwood.org.*

Fall webworm is food for many natural enemy species whose actions reduce population size and impact. Conservation of natural enemies includes restraint from using contact insecticides or judicious, well-timed applications when such beneficial organisms are not present.

Stressed or recently planted, smaller trees can be substantially weakened by intense webworm defoliation, potentially rendering them more vulnerable to opportunistic pathogens and/or insects. Aesthetic and nuisance considerations may prompt control attempts as well.

Fall webworm larvae and colonies are most susceptible to direct control when they are small. Hand picking larvae or destroying their tents can significantly reduce a local population. Destroying tents or larvae by burning should not be done, as it can easily cause more damage to the tree than defoliation. Several insecticides are registered for fall webworm control and, to be most effective, must be applied before tents and the larvae they contain become large. Some registered insecticides have activity against Lepidoptera only, sparing the natural enemies. Limitations of these products include: the material must be ingested to kill webworms, may be washed away by rain, and will only kill larvae that are very small. Pesticide coverage on tall trees can be especially challenging to achieve. Area-wide control in a forest setting is not warranted.

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1. Cranshaw, W.S. 2004. Garden insects of North America: the ultimate guide to backyard bugs. Princeton University Press. 656 p.
2. Cranshaw, W.S.; Leatherman, D.A.; Jacobi, W.R.; Mannix L. 2000. Insects and diseases of woody plants of the central Rockies. Bulletin 506A. Fort Collins, CO: Colorado State University, Cooperative Extension. 284 p.
3. Furniss, R.L.; Carolin, V.M. 1977. Western forest insects. Misc. Publ. 1339. Washington, DC: U.S. Department of Agriculture, Forest Service. 654 p.